

Davidson County  
Bridge No. 38 on SR 1493 (Frye Bridge Rd.)  
over Muddy Creek  
Federal Aid Project No. BRZ-1493(2)  
W.B.S. No. 38514.1.1  
T.I.P. No. B-4741

**INTRODUCTION:** Bridge No. 38 is included in the latest approved North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and is eligible for the Federal-Aid Highway Bridge Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

## **I. PURPOSE AND NEED STATEMENT**

NCDOT Bridge Management Unit records indicate Bridge No. 38 has a sufficiency rating of 19.1 out of a possible 100 for a new structure. The bridge is considered structurally deficient due to a structural evaluation of 2 out of 9. The bridge is also considered functionally obsolete due to deck geometry of 2 out of 9 according to Federal Highway Administration (FHWA) standards and therefore eligible for FHWA's Highway Bridge Program.

Bridge No. 38 has a sixty-three year old timber substructure that has a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement. Bridge No. 38 is approaching the end of its useful life.

Bridge No. 38 carries 3,000 vehicles per day with 5,600 vehicles per day projected for the year 2035. The posted weight limit on the bridge is 9 tons for single vehicles and 12 tons for truck-tractor semi-trailers. The bridge is approaching the end of its useful life. Replacement of the bridge will result in safer traffic operations.

## **II. EXISTING CONDITIONS**

The project is located southeast of rural Clemmons, Davidson County, along Frye Bridge Road (see Figure 1). Development in the area is residential in nature.

SR 1493 is classified as a minor collector in the Statewide Functional Classification System and it is not a National Highway System Route.

In the vicinity of the bridge, SR 1493 has a 22-foot pavement width with 2-foot grass shoulders (see Figure 3). The roadway grade is in a sag vertical curve through the project area. The existing bridge is on a tangent. The roadway is situated approximately 29.0 feet above the creek bed.